

# AMSAT SATELLITE REPORT



Number 37  
July 12, 1982

Editor: Vern Riportella, WA2LQQ  
Contr. Editors: Bob Nickels, KE0T  
Harry Bluestein, N6TE  
George Johnson, WQMD  
Managing Editor: Bob Myers, W1XT

## Project OSCAR Calendars Tracking Very Well

Comparison of the printed Project OSCAR Orbital Prediction Calendar and the latest NASA predictions shows the calendar tracking very well with the actual satellite motion. The calendar was developed and printed with very little experience on the orbits of the RS-birds. Nevertheless the calendar has borne up well after several months. The following are the most recent correction factors developed and may be used by those desiring the most accurate pointing information available.

With reference to the Project OSCAR Calendar, for AO-8 add 5 seconds to the calendar predictions. Likewise for the following: RS-3, add 46 seconds; RS-4, add 12 seconds; RS-5, add 6 seconds; RS-6, add 11 seconds; RS-7, add 26 seconds; RS-8, add 20 seconds.

The interpretation of the differences is that the satellites are lagging slightly behind their predicted positions because of extraordinarily high solar activity in June. The higher activity is presumed to result in increased drag. The validity dates for correction factors above are all 2 July. The mean discrepancy is now 18 seconds and the standard deviation is 14.4 seconds.

Donations to Project OSCAR for the calendars was brisk and W6XN is well-pleased with the response. He extends his thanks to all and reminds those still without this useful tool that a calendar showing every orbit of AO-8 and RS-3 through RS-8 may be obtained for \$8.75 postpaid (US, Canada, Mexico), \$11.00 elsewhere. Send to Project OSCAR, P.O. Box 1136, Los Altos, CA 94022.



John Pronko, W6XN, addresses Project OSCAR meeting.

## New Satellite DX Record Claimed

An all-time satellite DX record is being claimed by VK4TL and WH6AMX for their RS-8 QSO early Saturday, 3 July. Details were incomplete at presstime but it seems certain at least that this is the first VK-WH6 QSO via satellite ever. It remains to be verified, however, if the QSO represents the longest satellite DX on record. Congratulations to John and Rick in any case!

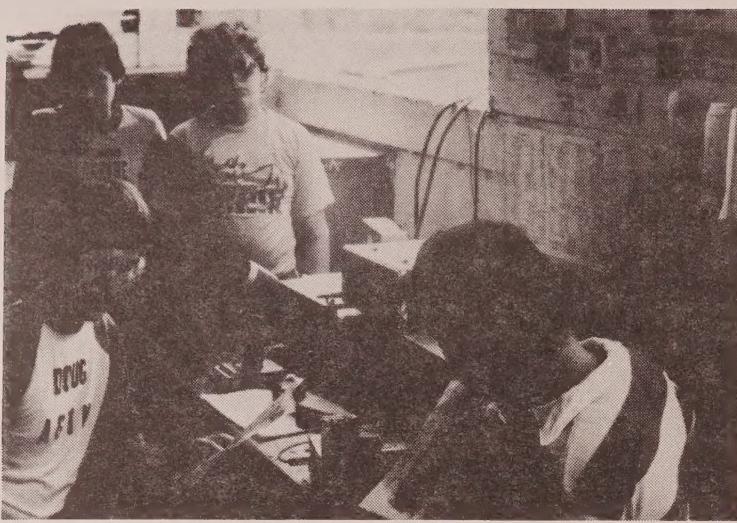
## Project OSCAR General Meeting Set

Project OSCAR President Dr. John Pronko, W6XN, has announced that the Project OSCAR General Meeting will be held at the Electronic Museum, Foothill College, Los Altos, California, on 21 July at 1900 PDST. The two hour meeting will feature the annual business meeting and reports on the various projects now under way in the group. Presenters include WB6JNN, Jim Eagleson; N6TX, Paul Shuch; Bob Stein, W6NBI; John Browning, W6SP; and W6XN.

This year there are 8 Project OSCAR Director seats open. Nominees include N6TX, WB6OOO, WB6KCJ, K6LFH, K6GSJ, W6NBI, W6SP and W6PUX.

Further details may be obtained from W6XN at (415) 941-6988.

	AO-8 (10703/78-26B)	UO-9 (12888/81-100B)
Element Set #	670	209
Ref. Epoch	82 177.55089787	82 172.35165762
1st Der. Mean Mot.	0.00000085	0.00006133
Inclination	98.7823	97.4956
RAAN	201.9957	134.9960
Eccentricity	0.0003302	0.0004480
Arg. of Perigee	223.4497	106.2242
Mean Anomaly	136.6285	253.9601
Mean Motion	13.96464706	15.16002619
Rev. # of Ref. Epoch	21960	3901



Rick, K1DS, in striped shirt and Doug, AG1M explain the motion of the satellites to campers at Camp Delaware in Connecticut.

## Nominations Close Soon

AMSAT HQ reminds everyone that the close date for nominations for Director is 31 July. The procedure for nominating was outlined in these pages previously (See ASR #33, 24 May 82). Your support of the annual election process is your means of determining AMSAT's future course. Nominate your candidate and vote in the annual election.

## AMSAT Activities At Annual ARRL Event Slated

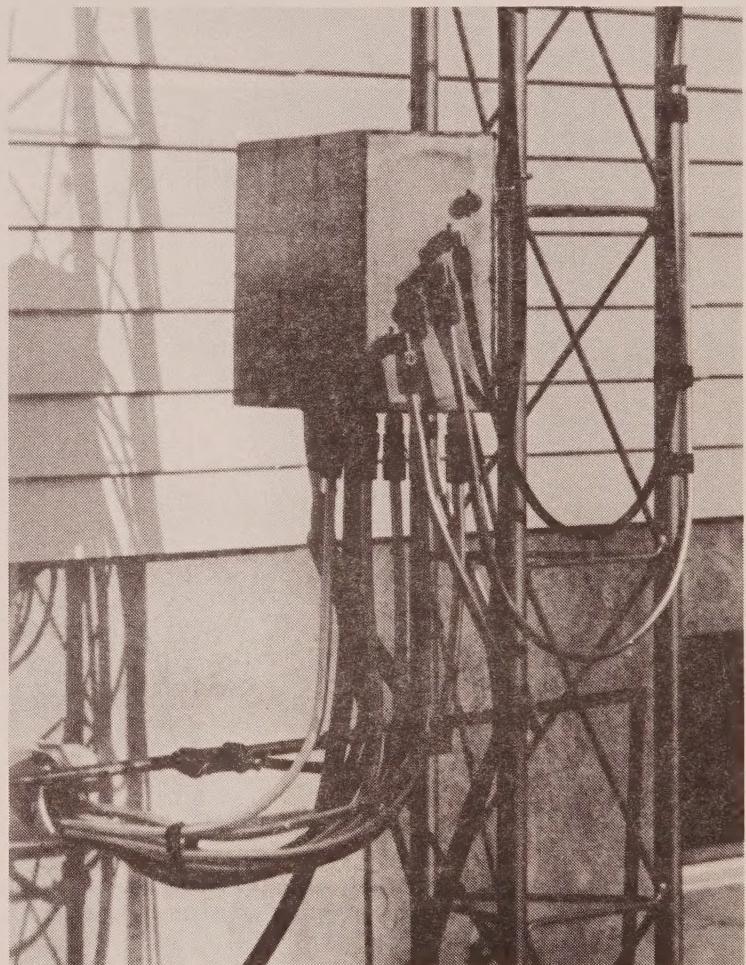
This year's Annual ARRL Convention at Cedar Rapids, Iowa will feature a full program of activities for the active amateur. For the OSCAR advocate, WØRPK has organized a full program of activities and attractions.

The AMSAT booth at the convention will be staffed by experienced OSCAR folks throughout the convention. Exhibit hours are: Friday, 23 July, 1800-2200; Saturday, 24 July, 0800-1700; Sunday, 25 July, 0800-1400. At the booth will be displayed the AMSAT video tape, KØRZ's Apple-based satellite information and tracking program, the prototype of the ZX-81 project along with lots of handouts and AMSAT premiums and tokens. OSCAR operators are strongly encouraged to bring along photos of their stations and equipment. A bulletin board will be populated with these photos to display the goodies that we are using. AMSAT members who wish to help staff

the booth will have an opportunity to participate by signing up at the booth for specific schedule assignments throughout the weekend.

The special AMSAT seminar is scheduled for Sunday, 25 July from 0900 to 1200. The program is divided into three, one hour segments with WØRPK leading off 0900 to 1000 with OSCAR basics followed by a question and answer session and break. Beginning at 1000 more advanced topics, including the KØRZ tracking program, will be discussed. Finally, at 1100 AMSAT President Tom Clark, W3IWI, will present a program on the Phase III project. Tom's talk will be followed by an extended question and answer period.

In sum, the ARRL National Convention is an event you'll want to have on your schedule. The convention will be held at Five Seasons Civic Center in downtown Cedar Rapids. See you there July 23-25!



Getting ready for Phase III. The hard line coax required for UHF transmission comes together at this combination junction box and lightning arrester at WA2LQQ.

	RS-3 (12997/81-120A)	RS-4 (13000/81-120D)	RS-5 (12999/81-120C)	RS-6 (13002/81-120F)	RS-7 (13001/81-120E)	RS-8 (12998/81-120B)
Element Set #	27	41	35	26	40	88
Ref. Epoch	82 146.27706038	82 177.47256686	82 174.40779749	82 177.46046327	82 163.08310646	82 174.155060107
1st Der. Mean Mot.	0.00000031	-0.00000008	0.00000035	0.00000022	0.00000090	0.00000201
Inclination	82.9618	82.9586	82.9606	82.9604	82.9571	82.9560
RAAN	190.5604	175.1193	177.0840	173.6925	182.5168	177.5881
Eccentricity	0.0060292	0.0019446	0.0009624	0.0052168	0.0023701	0.0018258
Arg. of Perigee	123.1572	113.1732	146.5662	71.6515	108.5621	188.9433
Mean Anomaly	237.5294	247.1380	213.6006	289.0214	251.8056	171.1294
Mean Motion	12.15573871	12.06646597	12.05038583	12.13547623	12.08661473	12.02925837
Rev. # of Ref. Epoch	1942	2304	2264	2317	2134	2257

## ARRL Director Silent Key

ARRL Atlantic Division Director Jesse Bieberman, W3KT, died suddenly recently at his home in Malvern, PA. Jesse was especially supportive of AMSAT's mission and was often an ardent spokesman on our behalf. He was a friend to many in the AMSAT community and will be missed. Besides being a highly respected ARRL Director, he was a top-rank DXer and for many years managed the third-district QSL bureau. Farewell OM.

## Sumner Get's Second New Job

Incoming ARRL General Manager Dave Sumner, K1ZZ, and his wife Linda recently became the proud parents of one Deryn Sumner. The "job" of being a daddy to little Deryn should be more fun and definitely more rewarding than his other new job at Newington. Congratulations on both accounts anyway!



Jan King, W3GEY and Phyllis Zwirko, XYL of K1HTV display AMSAT banner Phyllis made. This and other handsome covers will adorn the Phase IIIB Spacecraft in its trip from the U.S. to Kourou, French Guiana soon.

**Added this week to our Score Card, we are delighted to acknowledge sizable donations of equipment as indicated from Lunar Electronics and Henry Radio! The power supply will work in conjunction with the amplifier to assure the Porta-J terminal has a creditable signal in portable situations.**



Jim, WD0EEL, left, and Wray, W8GQW exchange views in front of the AMSAT Booth at the Dayton Hamvention in late April.

## Works Four Satellites In Half Hour

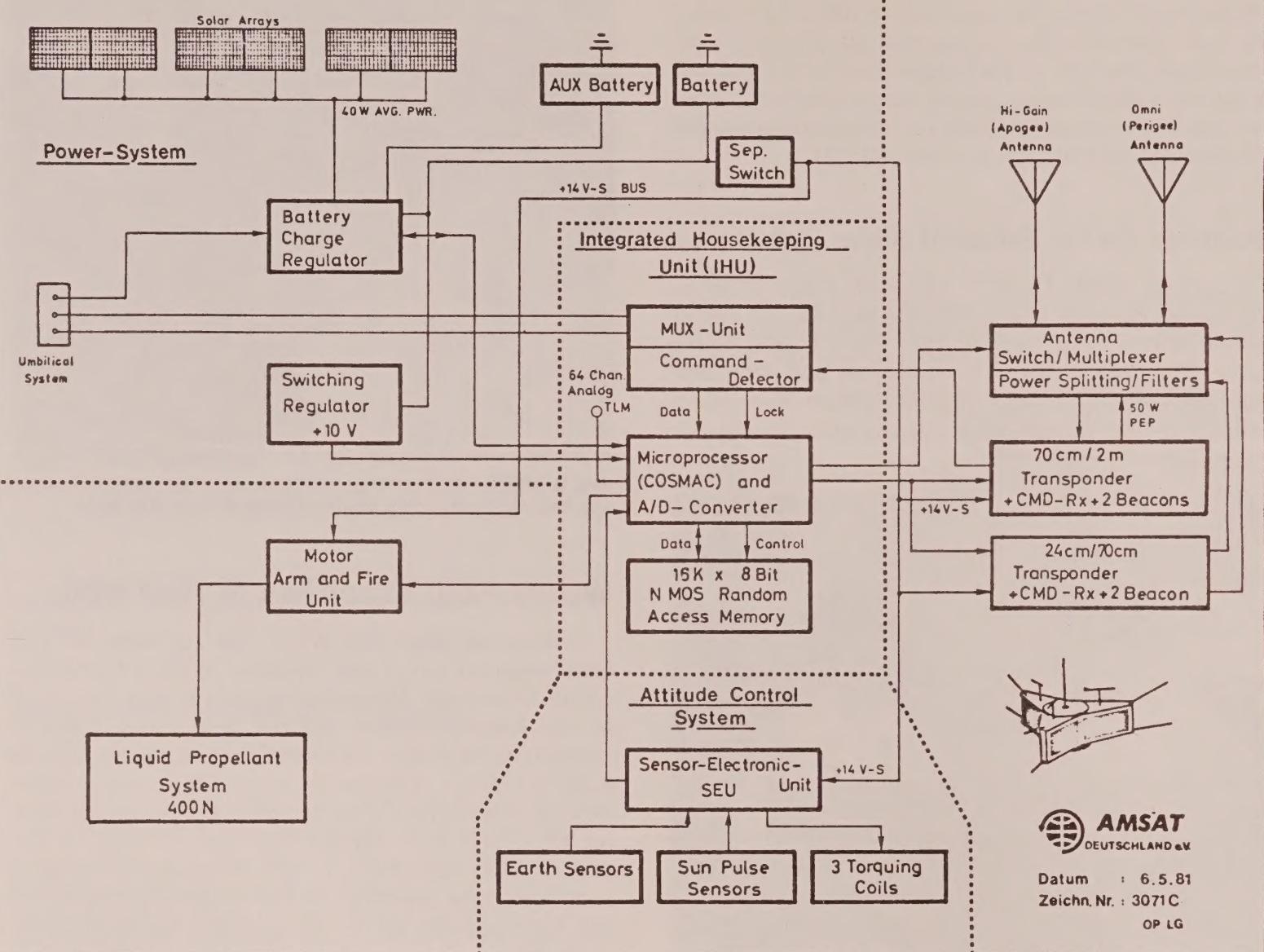
Veteran satellite DXer W6CG has set some kind of mark when on 3 July Bud managed to work 4 satellites within 28 minutes. The positioning of the birds was ideal for the Anaheim station and the results were contacts covering more than a continent and half an ocean. Bud worked KH6IBA in Hawaii on RS-8, WØCA in Minnesota on RS-6, WBØGAI in Colorado and WA2LQQ in New York on AO-8 and then capped the feat by QSOing the ROBOT of RS-5! Bud's feat might be beaten by someone with some good planning and having the satellites in just the right spot with all the transponders and/or ROBOTS on, but for now, Bud's got the record. Can you remember back to the dim and distant past when we had only one satellite to work?!? Oh! It seems life was so simple then. Will it ever be the same? Hi.

### Porta-J Scorecard

Equipment	Manufacturer	Donor
2-meter, 70-cm crossed Yagi antennas and accessories	KLM	KJI Electronics (K2KJI)
70-cm GaAs FET Preamp.	Advanced Receiver Research	Advanced Receiver Research (W1VD)
70-cm-to-10-M Converter and low-pass filter	Microwave Modules	Spectrum International (G3BVU)
10-meter receiver	(open)	(open)
2-meter transmitter	(open)	(open)
2-meter amplifier	Lunar	Lunar (WB6NMT)
12-volt power supply	Astron	Henry Radio (W6UOU) with WA6VGS

## PHASE-IIIB S/C FUNCTIONAL BLOCK DIAGRAM

Communication-System



The complete Phase IIIB spacecraft functional block diagram. You might want to study this diagram for familiarity and to keep the diagram handy. We will be referring to it frequently in future issues as we pick up the Phase III countdown series. The next installment will be on perhaps the most complex and least understood of all the spacecraft functional units: the Sensor Electronics Unit (SEU). The complexity and elegance of this unit will amaze! The block diagram is part of a complete documentation package produced by AMSAT DL to whom we extend "viel danke!"

### Callsign Badges Garner AMSAT Bucks

The AMSAT callsign badge campaign initiated by AMSAT's Deputy Chief Area Coordinator (USA) Jack Somers, WA6VGS, has resulted in several benefits to the organization. Now reaching over eight hundred in the year since the program began, the badges help pay for member services and supplies. Moreover, the appearance at gatherings of the handsome badges serves to remind amateurs of where the excitement is in amateur radio today. ASR takes this opportunity to thank those who continue to directly support this highly successful program. Especially mentioned are those that make the badge program run: WA6VGS, Martha Saragovitz, WDØEEK and K6MFJ. Thanks to all!

### ASE Keeps Orbital Data Updated

As mentioned elsewhere in this ASR, orbital information is printed here as space allows and as the demand requires to the best balance we can determine. However, some individuals may require Keplerian elements more frequently than we can provide them. The AMSAT Software Exchange (ASE) is performing yeoman's duty in this context by keeping on its computer system the very latest Keplerian data available. You can access the ASE as described in ASR #31 at the corrected phone number of (512) 852-8194. Thanks to Bob, N5AHD, for his continuing efforts in this connection.